

STATE OF CALIFORNIA

Green California Schools Summit and Exposition

December 4-6, 2007

Presented by the
Office of Public School Construction (OPSC)
California Energy Commission (CEC)



How Do I Pay for This?

Proposition 1D and Other Funding Options and Strategies

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Executive Summary

- Who is the Office of Public School Construction?
- Why High Performance Schools?
 - Landscape
 - Benefits
 - LEED vs. CHPS
- Proposition 1D Program Overview
- Bright School Program Overview
- Energy Efficiency Financing Program Overview
- Wrap up / Questions and Answers

Who is the Office of Public School Construction?

The Office of Public School Construction, as staff to the State Allocation Board, implements and administers the School Facility Program and other programs of the State Allocation Board.

Major functions:

- Verify that all applicant school districts meet specific criteria based on the type of funding which is being requested.
- Prepare recommendations for the SAB's review and approval.
- Prepare regulations, policies and procedures which carry out the mandates of the SAB.
- Prepare agendas for the SAB meetings.



High Performance Current Energy Landscape

- 1,000 School Districts
- 10,000 facilities
- 6.2 million students
 - ⚡ @ 941 kilowatts per pupil per year . . .
 - ⚡ 5.9 billion kilowatt hours
 - ⚡ \$638.8 million
 - ⚡ 2.4 million tons of CO₂ emissions per year

High Performance – Benefits

- Improve student results
 - Reading scores increase by 26 percent
 - Math scores increase by 20 percent
- Reduce operating expenses
 - Reduce water use by 32 percent
 - Reduce energy use by 33 percent

Benefits Quantified

- Save \$210.8 million
 - ⚡ Hire 2,100 teachers or
 - ⚡ Buy 3.5 million textbooks or
 - ⚡ Buy 210,000 computers
- Reduce CO₂ Emissions by 785,000 tons!



CHPS vs. LEED

CHPS

- Sustainable Sites
- Water
- Energy
- Materials
- Indoor Environmental Quality
- Policy & Operations

LEED

- Sustainable Sites
- Water Efficiency
- Energy & Atmosphere
- Materials & Resources
- Indoor Environmental Quality
- Innovation & Design Process

Assembly Bill (AB) 127

Set aside \$100 million in incentive grants to promote the use of high performance attributes in new construction and modernization projects for K-12 schools. High performance attributes include:

- **Using designs and materials that promote energy and water efficiency.**
- **Maximizing the use of natural lighting.**
- **Improving indoor air quality.**
- **Utilizing recycled materials and materials that emit a minimum of toxic substances.**
- **Employing acoustics that are conducive to teaching and learning.**

High Performance Rating Criteria

The High Performance Rating Criteria (HPRC) was modeled after the 2006 Collaborative for High Performance Schools (CHPS) criteria.

- The five categories used for the HPRC are:
 - Site
 - Water
 - Energy
 - Materials
 - Indoor Environmental Quality

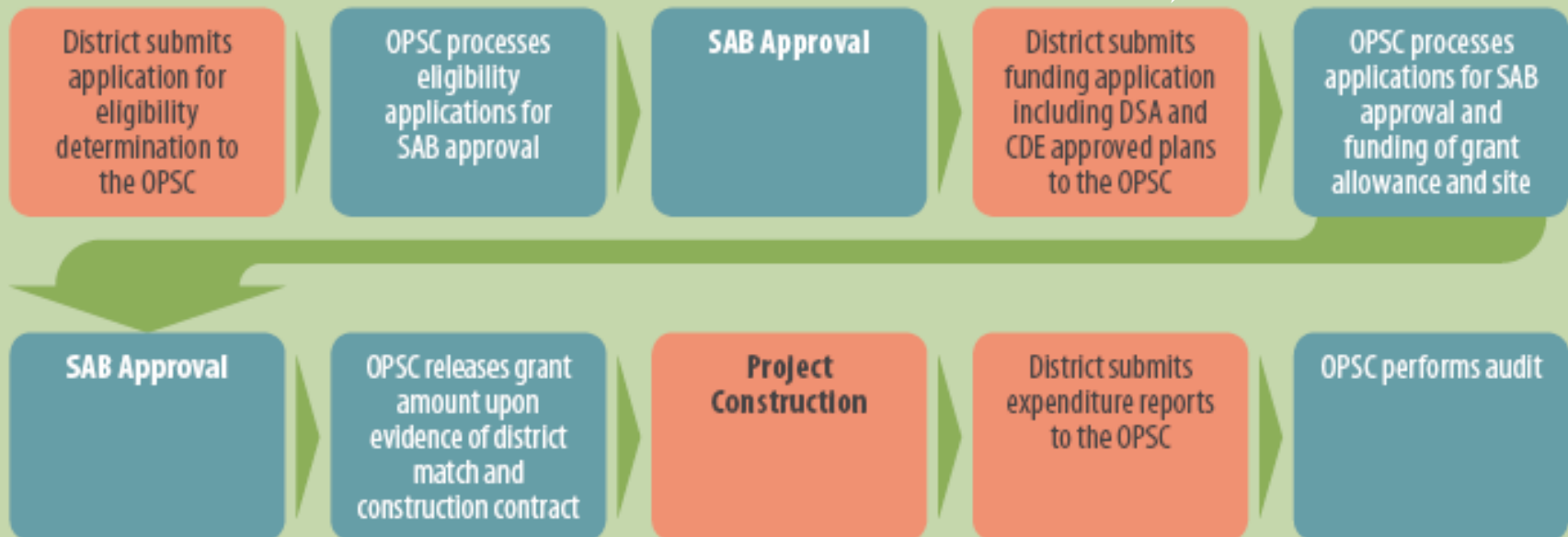
High Performance Rating Criteria

- The DSA will oversee the review of plan designs and report the high performance rating score to the OPSC.
- The project which includes a complete set of plans must be submitted to and accepted by the DSA on or after May 20, 2006.
- The increase to the base grant will be determined by the number of credits the project receives multiplied by a percentage factor which will ultimately provide an increase ranging from two to just over ten percent.

OPSC – Funding Process

HP score identified
on Form SAB 50-04

State School Building Funding Process (New Construction and Modernization)



New Construction Projects

- Must meet all prerequisites in all HPRC categories; then, the district may select the credits they wish to pursue.
- Projects accepted by the DSA utilizing the *CHPS Best Practices Manual Volume III 2006 Edition*, will have a minimum point threshold of 27 points and a maximum of 75 points.

New Construction Grant Amounts

Two percent at 27 points plus 0.050 percent for each point attained from 28 through 33 points; or

2.35 percent at 34 points plus 0.24 percent for each point attained from 35 through 40 points; or

Four percent at 41 points plus 0.36 percent for each point attained from 42 through 54 points; or

9.05 percent at 55 points plus 0.060 percent for each point attained from 56 through 75 points.

The percentage increases above shall only be applied to the New Construction base grant.



Additions to a Site and Modernization Projects

- Must meet all prerequisites that are within the scope of the project; then, the district may select the credits they wish to pursue.
- Projects accepted by the DSA utilizing the *CHPS Best Practices Manual Volume III 2006 Edition*, will have a minimum point threshold of 20 points and a maximum of 77 points.

Additions to a Site and Modernization Grant Amounts

Two percent at 20 points plus 0.025 percent for each point attained from 21 through 33 points; or

2.35 percent at 34 points plus 0.24 percent for each point attained from 35 through 40 points; or

Four percent at 41 points plus 0.36 percent for each point attained from 42 through 54 points; or

9.05 percent at 55 points plus 0.060 percent for each point attained from 56 through 77 points.

The percentage increases above shall be applied to the appropriate New Construction or Modernization base grant.



Funding Calculation Example:

Scenario –

New Construction project for a 1000 pupil elementary school designed to the 2006 criteria with 41 points achieved and verified by DSA.

Base grant: $\$8081 \times 1000 \text{ pupils} = \$8,081,000$

41 points = 4.0 percentage increase

Therefore;

$8,081,000 \times 4.0 = \$323,240$ in incentive grants

Documents Required by DSA

- Electronic Files
 - Excel File of Scorecard
 - EnergyPro File of Title 24, Part 6
 - PDF files of Specifications
 - PDF files of Cut-sheets
 - PDF files supporting document
- ½ Size of Full Set of Plans
 - Electronic Plan Review optional for small projects
- Guidelines available on DSA Website



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Website Resources

- **OPSC Website**
www.opsc.dgs.ca.gov
- **California Energy Commission Website**
www.energy.ca.gov
- **DSA Website**
<http://www.dsa.dgs.ca.gov/OtherProg/hps.htm>
- **DSA Website Link to Energy Regulations**
<http://www.dsa.dgs.ca.gov/OtherProg/energyregs.htm>
- **Collaborative for High Performance Schools**
www.chps.net

K-12 School Energy Efficiency Programs



**Green California
Schools Conference**

Pasadena

Who is the Energy Commission?

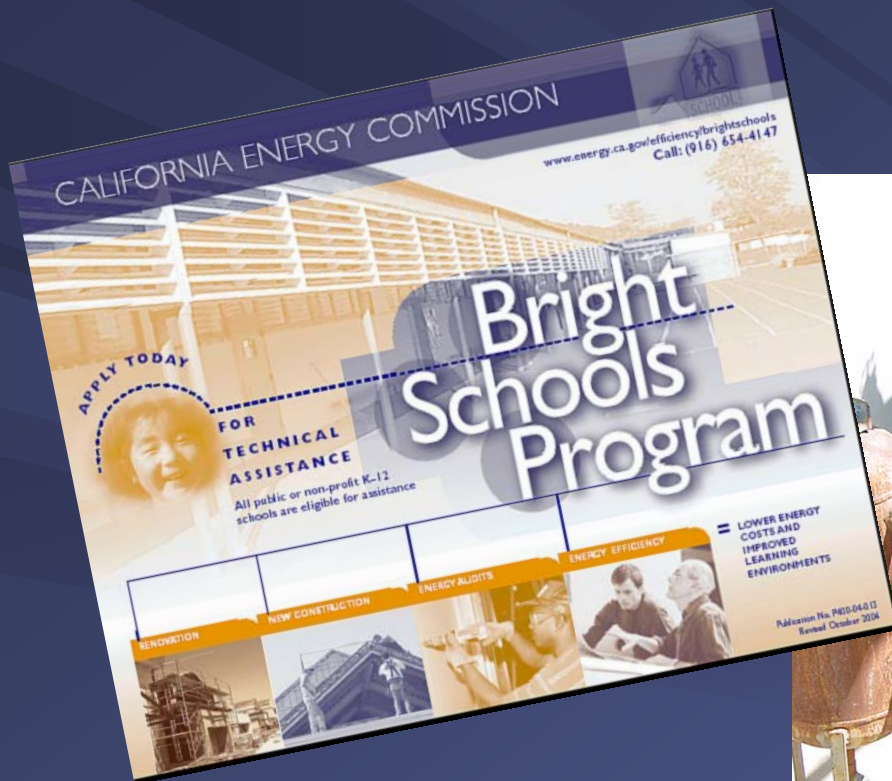
Energy policy and information
advisor to the California governor
and legislature

- Major functions:

- Promote energy efficiency and renewable energy
- Develop building & appliance standards
- License power plants
- Assess current and future energy trends
- Advance energy technologies
- Assess alternative transportation fuels



Bright Schools Program



\$20,000 of Free Technical Assistance

BRIGHT SCHOOLS PROGRAM HISTORY

- Since 1988, \$4 million in technical assistance to public schools
- Over 300 participating public school districts—80% small school districts ($ADA \leq 2,501$ students)
- Avg. annual utility bill savings estimated 20%
- District can participate multiple times



Free Service Include:

- Comprehensive Energy Audits
- New Construction Design Review
- Proposal Review Assistance
- Bid Specification Assistance



Districts can participate multiple times

What is included in a Comprehensive Energy Study?

- **Executive Summary**
- **Existing Energy Use**
- **Energy Using Systems**
- **Energy Project Recommendations**
 - Annual Cost Savings
 - Project Costs
 - Simple Payback Period
 - All engineering calculations
 - Green house gas savings
- **Rebates and Financing Available**

Free Photovoltaic (PV) Project Proposal Evaluation

- We Will Compare and Analyze:
 - Electricity discounts
 - Electricity escalation rates
 - Terms of purchase agreements



Fortuna Joint Union High School District

Project Recommendations:

- Lighting Efficiency Improvements
- HVAC Controls
- Tankless Water Heaters

Estimated Project Cost = \$90,552
Cost Savings = \$ 17,932 per year
Simple payback after incentive = 5 years

Other Analysis Completed:

- Solar PV Analysis



Simple Application Process

The image shows a sample of a 'California Energy Commission Technical Assistance Application' form. The form is titled '1. Applicant Information' and includes fields for 'Applicant Name', 'Address', 'City', 'State', 'Zip', 'Phone', 'Fax', 'Email', and 'Website'. It also has a section for '2. Project Description' with checkboxes for 'New construction energy efficiency design', 'Existing building energy audit and recommendations', 'Energy audit only', and 'Other'. A table at the bottom is titled '3. Project Details' and has columns for 'Title', 'Status', 'Description', and 'Date'. The table is currently empty.

- Two page application
- Governing body resolution can follow
- Latest 12 months of utility (electric & gas) bills for each facility account
- Any past energy studies
- Your site map

Common Questions

Question: How long will it take to get an audit report?

Answer: Once we get a complete application, a draft report should be done in 3-6 months – sometimes quicker.

Question: How many buildings can be covered with the \$20,000?

Answer: For a comprehensive audit, about 200,000 square feet. We can fund additional studies if you implement the recommendations.

Energy Efficiency Funding Available Now: \$20 Million

- Funding for energy efficiency and self generation projects
- 3.95% Interest Rate
- Up to 100% funding for projects
- Up to \$3 million per application—no minimum

First come, first served

EASY LOANS

No application fees, points, or hidden costs

Interest Rate
3.95%

FINANCING FOR ENERGY EFFICIENCY
& ENERGY GENERATION PROJECTS

APPLICATION

- Public Schools & Colleges
- Public Hospitals
- Local Governments
- Special Districts
- Public Care Institutions



CEC-400-2007-010

ARNOLD SCHWARZENEGGER
Governor

California Energy Commission

<http://www.energy.ca.gov/efficiency/financing/index.html>
Phone: (916) 654-4147

Unique Financing Features

- Simple application, no fees or points
- Technical review of each application
- Pay us back with the estimated project savings
- First payment due min. 6 months after project completion
- Up to 15 years to pay us back, no penalty for paying us early

Unique Financing Features (cont.)

- Funds can supplement incentives and rebates
- Loans are not collateralized or secured
- Complementary technical support available during and after project installation
- $\text{Max. Loan} = \text{Annual cost savings} \times 10 \text{ years}$ or the total project cost whichever is less

Simple Application Process

- **Complete one page application**
 - ✓ If you already have a feasibility study, attach it with your application.
 - ✓ If you don't have a study, contact us for assistance in identifying projects.
- **Governing body resolution can come later**

When Will Funds Be Available?

- Applications can be approved in 4-6 weeks
- Expenses can be incurred after CEC approval
- CEC pays invoices on a reimbursement basis
 - ✓ Payment in about 4-6 weeks, funds can be wired for quicker payout

Funding for Photovoltaic Systems

Question: Can we get funding for a photovoltaic system?

Answer: Yes, but to maximize our funding, package it with other energy efficiency measures so that the overall payback is as close to 10 years. We can help identify projects to maximize your cost savings.

Funding for Solar Photovoltaics

Project	Annual Cost Savings	Project Cost	CSI Rebate	Simple Payback (yrs) w/CSI rebate
Lighting Retrofits	\$30,000	\$150,000		5
Mechanical Controls	\$6,000	\$30,000		5
Vending Machine Controls	\$1,300	\$1,300		< 1
50 kW (AC) PV System	\$9,000	\$425,000	\$130,000	32.3
Total	\$46,300	\$606,300	\$130,000	10.3

CEC Funding for efficiency package = up to \$463,000

CEC Funding if PV were only project funded = \$90,000

Willits Unified School District

“Faced with budget issues, the District was determined to realize savings by reducing energy use. Thanks to a low interest loan from the Energy Commission we were able to install energy efficient lighting and HVAC units throughout the District”...

Steve Jorgensen – District Superintendent

Bright School Program –

Provided a \$19,960 audit at no cost to the district.

CEC Loan: \$ 106,777

Est. Annual Cost Savings: \$14,600

Simple Payback: 7.3 years



Anderson Union High School District

Projects Installed:

- Lighting and controls
- Chiller for the administration building
- Re-commission the energy management system
- 245 kW photovoltaic system

Estimated Project Cost = \$2,017,500
Utility Rebate = \$857,500
CEC Loan = \$1,160,000
Cost Savings = \$118,333 per year
Simple payback after rebate = 9.8 years

266 tons of CO2 Saved



Energy Commission Websites

- **Bright Schools Program**
 - www.energy.ca.gov/efficiency/brightschoools
- **Energy Efficiency Financing Program**
 - www.energy.ca.gov/efficiency/financing

Thanks

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Questions

